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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,861	11/05/2001	Michael Persson	ANO 6129 PIUS/3159	6497

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09/09/2004

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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/007,861

Applicant(s)

PERSSON ET AL.

Examiner

Daniel S. Metzmaier

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 26-72 is/are pending in the application.
- 4a) Of the above claim(s) 36-42, 54-60 and 64-72 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 26-35, 43-53 and 61-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1 and 26-72 are pending.

Election/Restrictions

1. This application contains claims 36-42, 54-60, and 64-72 drawn to an invention nonelected with traverse in Paper filed October 6, 2003. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 26-31 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Johansson et al, US 5,447,604¹. See column 2, line 3 to column 3, line 12, and examples. Johansson et al '604 discloses the claimed process, where Johansson et al '604 (column 2, lines 56-57) teaches "The obtained sol will hereby normally get a pH value above 10.5. This is a clear disclosure of the formation of sols alkalized to applicants' alkalizing step of a pH of at least 10. The alkalizing step, particle growth and

¹ Patent Family member to WO 91/7351.

Art Unit: 1712

the alkalizing step of the obtained sol read on the same alkalizing step since the claim fails to define which "obtained sol" the alkalizing step (d) refers or how the alkalizing steps differ. Said second alkalizing step reads on alkalizing the alkalized sol immediately upon reaching a pH of at least 7. Johansson et al '604 (column 3, lines 3-9) discloses particle growth occurs after alkalization for about a week and the sols are stable for months. A week of growth reads on at least 10 minutes claimed.

The amended claims read on pouring or pumping the alkalizing agent into the acid sol since the act of pouring results in a progression to a pH of at least 7 necessarily followed by a pH of greater than 10.0 by the continued addition. The steps are different based on the pH achieved. The claim amendment sets forth a first alkalizing step to form an alkalized sol to a pH of at least 7. The second alkalizing step of the obtained sol to a pH of at least 10.0. Applicants' claims do not define the obtained sol nor do the claims define the steps as sequential. Particle growth would have been expected to occur upon the addition of the alkalizing agent in the first alkalizing step.

Example 1 discloses the use of a higher concentration sodium silicate than the acid sol formed in step (a). The addition of the sodium silicate to the acid sol reads on concentrating. The addition of sodium silicate after the pH is anywhere above 7 reads on concentrating the alkalized sol obtained according to step (b).

5. Claims 1, 29-30, 32-35, 43, 47-48 and 50-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Johansson et al, US 5,643,414. (column 2, line 33, to column 4, line 35; and examples) discloses methods of making sols. Patentees example 1 disclosure of "about 9.5" is deemed to read on the alkalizing to a pH of at least 10

Art Unit: 1712

claimed. The ranges of the SiO₂ to M₂O ratios overlap those claimed. The surface area would have been expected to be inherent for the materials made by the same processes.

The alkalizing step, particle growth and the alkalizing step of the obtained sol read on the same alkalizing step since the claim fails to define which "obtained sol" the alkalizing step (d) refers or how the alkalizing steps differ. Said second alkalizing step reads on alkalizing the alkalized sol immediately upon reaching a pH of at least 7. The amended claims read on pouring or pumping the alkalizing agent into the acid sol since the act of pouring results in a progression to a pH of at least 7 necessarily followed by a pH of greater than 10.0 by the continued addition. The steps are different based on the pH achieved. The claim amendment sets forth a first alkalizing step to form an alkalized sol to a pH of at least 7. The second alkalizing step of the obtained sol to a pH of at least 10.0. Applicants' claims do not define the obtained sol nor do the claims define the steps as sequential. Particle growth would have been expected to occur upon the addition of the alkalizing agent in the first alkalizing step.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art Unit: 1712

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 26-35, 43-53 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson et al, US 5,643,414, optionally in view of Brekau et al, US 5,458,812, Vossos, US 3,714,064, Chilton, US 3,560,400, and Mindick, 3,502,593. Johansson et al '414 (column 2, line 33, to column 4, line 35; and examples) discloses methods of making sols. Patentees example 1 disclosure of "about 9.5" is deemed to read on the alkalizing to a pH of at least 10 claimed. The ranges of the SiO₂ to M₂O ratios overlap those claimed. The surface area would have been expected to be inherent for the materials made by the same processes. Johansson et al '414 (column 3, lines 13-19) discloses the pH for the particle growth is 8-11 and the SiO₂ to M₂O ratio overlapping that claimed. Johansson et al '414 (example 1) sets forth the sol formed has a pH of about 9.5 and the particles have a specific surface area of 910 m²/g.

To the extent the Johansson et al '414 reference differs from the claims in the explicit recitation of a second alkalizing step (d) to a pH of at least 10, some variation in the pH would have been expected in the Johansson et al '414 processes and applicants have not shown the added step of alkalizing to a pH of at least 10 to have criticality to the invention.

Furthermore, the Johansson et al '414 reference contemplates the further alkalization in a second step employing the disclosed (column 3, lines 3-9) alkalizing agent, i.e., sodium, potassium hydroxides or sodium or potassium water glass (silicate). Applicants' claims employ the open language "comprising" and would not exclude any further steps that may be present in the Johansson et al '414 reference process.

Johansson et al '414 (column 4, lines 25-27 ; and column 5, lines 58-59) further teaches the sols may be utilized in paper making processes having pH range of 4 to 10.

It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ a sufficient alkalization for the stabilization of the final products since the Johansson et al '414 reference clearly contemplates pH values of up to 11 and SiO_2 to M_2O ratios reading on applicants' SiO_2 to M_2O ratios.

To the extent the Johansson et al '414 reference differs from claims 26-28, 44-46 and 61-63 in the concentrating the silica sols during or following the processing steps, Brekau et al, Vossos, Chilton, and Mindick disclose making silica sols and concentrating said sols by various methods for the advantages of reducing storage and shipping cost.

Furthermore, Vossos (columns 1 and 2, see also column 2, lines 61-62) teaches stable sols with a pH of 9 to 11 and surface areas in excess of $600 \text{ m}^2/\text{g}$. Chilton (column 3, lines 8-10) teaches the sols are have a silica soda ratio before or after concentration to correspond to a pH of 9-11. Brekau et al (column 4) teaches varying pH ranges up to 12, 11 and 10.5.

These references are combinable because they teach methods of making silica sols from acidic silicic acid and sodium silicate or metal hydroxide by particle growth. It

Art Unit: 1712

would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ a concentrating step after the alkalizing step in the Johansson et al '414 reference for the advantages of reducing storage and shipping cost.

Furthermore, It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to further alkalize the sols for stabilization within the art known pH ranges shown in the art.

Response to Arguments

9. Applicant's arguments filed June 14, 2004 have been fully considered but they are not persuasive.

10. Applicants (page 12) assert the Johansson et al '604 reference lacks a two alkalizing steps with a step of particle growth in between. This has not been deemed persuasive since the claims do not define "two alkalizing steps with a step of particle growth in between". The claims do not define "the obtained sol" in step (d), the claims do not define the process steps as sequential, and the claims do not define how said first alkalizing and second alkalizing steps differ, e.g., in time, pH. Since the pH progresses from 1 to 4 in the Johansson '604 reference to greater than 7 followed to greater than 10.0, said claims read on mere pouring or pumping the alkalizing agent into the acid sol resulting first in a pH of at least 7 followed by a pH of at least 10.0. It is noted, claims are given their broadest reasonable interpretation during prosecution.

11. Applicants (pages 13 and 14) assert the Johansson et al '414 reference lacks a teaching of the a second alkalizing step with an alkali metal hydroxide or an aqueous silicate solution. The claims are anticipated for similar reasons as set forth in the above

Art Unit: 1712

anticipation rejection over Johansson et al '604. The claims do not define "the obtained sol" in step (d), the claims do not define the process steps as sequential, and the claims do not define how said first alkalizing and second alkalizing steps differ, e.g., in time, pH.

Furthermore, the Johansson et al '414 reference discloses (columns 3 to 4, lines 65 to 4) the steps of reducing the sodium content by cation-exchange, wherein a pH adjustment can be required to a pH above 7 to prevent decomposition of the aluminate at modification. Clearly, the Johansson et al '414 reference contemplates the further alkalization in a second step employing the disclosed (column 3, lines 3-9) alkalizing agent, i.e., sodium, potassium hydroxides or sodium or potassium water glass (silicate).

12. Applicants (page 14) assert the remaining obviousness rejection should be withdrawn based on the previous arguments set forth to rebut the Johansson et al '414 reference. This has not been deemed persuasive and said arguments have been addressed above.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 1712

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM